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Trade in Manufactures: A Singapore Perspective*

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I Introduction

In 1972, a new development strategy to attract high technology and skill intensive industries and to transform Singapore into a brain services centre was drawn up by the government. It was Singapore's third strategy in 12 years (it was to be consciously implemented only during 1979–1981 largely through the wage adjustment policy of the National Wages Council¹⁾) and it is an indication of how rapidly economic conditions had changed since 1960 when Singapore embarked on the road to industrialization to counter the effects of a stagnating entrepot economy.

Before and during its merger with Malaysia, Singapore adopted an import-substitution policy, the rationale for which evaporated as soon as Singapore withdrew from Malaysia in 1965. Deprived of a larger domestic market, Singapore turned outward-looking and chose an export-orientated labour intensive industrialization strategy, led by

foreign investment.

This strategy was phenomenally successful in raising output and creating employment. By early 1972, Singapore was beginning to experience widespread shortages in labour supply. Aware that it might not be able to retain its competitive advantage in labour-intensive activities against other East and South-East Asian countries, Singapore devised a new but flexible program to restructure the economy and move it into more skill intensive and technologically sophisticated industries as well as a variety of high value added "brain services."²⁾

One significant change as a result of the post-independence development policy has been the rapid rise of the manufacturing sector as a cornerstone of growth in Singapore. At the outset of the industrialization programme in the early 1960's, Singapore's major manufacturing industries were largely those that enjoyed natural protection because of high transport costs, specific consumer needs or had easy access to the region's raw materials for processing. By the late 1970's, the manufac-

* This paper was written with the help of Niam Chiang-Meng. The currency used herein is the Singapore dollar which was equivalent to US\$ 0.47 at the time of writing.

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1) For a deeper insight into the NWC, see Lim Chong-Yah [1982].

2) For a more detailed discussion on economic restructuring in Singapore, see "Restructuring the Singapore Economy" and "Economic Restructuring in Singapore" in Lim Chong-Yah [1980].

turing sector has been transformed to become not only export dependent, but also to produce a much wider range of increasingly sophisticated consumer and investment goods, with more and more emphasis on goods that are less sensitive to protectionist measures in external markets.

Not only has the composition of Singapore's manufactured goods changed over time but equally important, Singapore's trading partners were diversified to include countries which previously had little or no trade with Singapore. Whilst intra-Asean trade in manufactures is being increasingly liberated, trade with the other newly industrializing countries as well as the advanced industrialized countries were also being either expanded or maintained.

As a result, in the late 70's, and early 80's, the Pacific Basin countries³⁾ have come to be increasingly important both as an export market for Singapore's manufactured goods and as a supplier of her imports. A sort of economic interdependence has been unwittingly fostered by the countries of the Pacific Basin and this interdependence has been heightened by the present world-wide economic recession.

3) For this paper, unless otherwise stated, the countries making up the Pacific Basin will be deemed to consist of the members of Asean, Taiwan, Hong Kong, South Korea, Japan, Canada, the United States, Australia and New Zealand.

Table 1 Singapore's Gross Domestic Product by Industry at Current Factor Cost for Selected Years (%)

	1960	1970	1982p
Agriculture and Fishing	3.8	2.5	1.1
Quarrying	0.3	0.4	0.5
Manufacturing	11.8	19.7	26.4
Utilities	2.5	2.8	1.7
Construction	3.6	7.3	9.7
Trade	35.9	30.2	21.9
Transport and Communication	14.2	11.2	13.4
Financial and Business Services	11.3	14.2	21.9
Other Services	18.2	13.8	11.2
Less: Imputed Bank Charges	1.6	2.1	7.8
Total	100.0	100.0	100.0

p: preliminary

Source: Derived from Statistics published in the *Economic Survey of Singapore*, 1982.

The rapid emergence and transformation of the manufacturing sector in the Singapore economy, the changing direction and pattern of Singapore's trade in manufactures, the importance of the Pacific Basin region to Singapore and the need for greater cooperation in trade amongst the countries in this region will be highlighted in the discussion that follows.

II Manufacturing in the Singapore Economy

First, a brief description of the manufacturing sector. As can be seen from Table 1, whereas in 1960 it constituted only 11.8% of Singapore's GDP at current factor cost, in 1982 it has risen to 26.4%, making it the largest sector in the economy. It has also become the largest employer of labour in Singapore. In 1982, 273,042 persons out

Table 2 Principal Statistics of Manufacturing by Major Industry Group, 1982p

Industry	Establishments		Employment		Remuneration		Output		Value Added		Workers per Establish- ment	Remu- neration per Worker	Value Added per Worker	Ratio of Value Added to Output
	No.	%	No.	%	\$ Mil	%	\$ Mil	%	\$ Mil	%	No.	\$'000	\$'000	%
Food & Beverages	301	8.5	13,312	4.9	169.5	5.4	2,183.3	6.1	577.9	6.3	44	12.7	43.4	26.5
Textiles	91	2.6	6,586	2.4	61.3	2.0	335.5	0.9	105.4	1.1	72	9.3	16.0	31.4
Wearing Apparel	497	14.0	31,016	11.4	209.9	6.7	1,018.5	2.9	338.0	3.7	62	6.8	10.9	33.2
Wood Products	132	3.7	7,312	2.7	68.6	2.2	530.0	1.5	134.7	1.5	55	9.4	18.4	25.4
Furniture	118	3.3	6,425	2.4	63.3	2.0	270.4	0.8	99.9	1.1	54	9.9	15.5	36.9
Paper Products & Printing	400	11.3	17,108	6.3	209.3	6.7	939.3	2.6	428.7	4.6	43	12.2	25.1	45.6
Chemical Products	129	3.6	6,530	2.4	108.8	3.5	1,074.6	3.0	484.0	5.2	51	16.7	74.1	45.0
Petroleum	11	0.3	3,834	1.4	140.7	4.5	14,370.3	40.3	1,680.2	18.2	349	36.7	438.2	11.7
Rubber & Plastic Products	248	7.0	10,348	3.8	95.7	3.0	619.8	1.7	230.5	2.5	42	9.2	22.3	37.2
Nonmetallic Minerals	88	2.5	5,181	1.9	76.2	2.4	959.1	2.7	293.9	3.2	59	14.7	56.7	30.6
Basic Metals	27	0.8	2,228	0.8	41.1	1.3	521.1	1.5	164.2	1.8	83	18.4	73.7	31.5
Fabricated Metal Products	383	10.8	19,871	7.3	236.4	7.6	1,527.4	4.3	546.9	5.9	52	11.9	27.5	35.8
Machinery & Appliances	640	18.0	99,912	36.8	1,091.9	34.9	8,483.7	23.8	2,847.3	30.9	156	10.9	28.5	33.6
Transport Equipment	289	8.1	29,798	11.0	443.4	14.2	2,059.2	5.8	1,053.2	11.4	103	14.9	35.3	51.1
Precision Equipment	51	1.4	5,463	2.0	52.5	1.7	296.3	0.8	108.8	1.2	107	9.6	19.9	36.7
Other Products	144	4.1	6,607	2.5	59.6	1.9	462.4	1.3	126.6	1.4	46	9.0	19.2	27.4
TOTAL excl Rubber Process- ing	3,549	100.0	271,531	100.0	3,128.2	100.0	35,650.9	100.0	9,220.2	100.0	77	11.5	34.0	25.9
Rubber Processing	12	—	1,511	—	17.4	—	437.0	—	30.8	—	126	11.5	20.4	7.0
TOTAL incl Rubber Process- ing	3,561	—	273,042	—	3,145.6	—	36,087.9	—	9,251.0	—	77	11.5	33.9	25.6

Note: Refers to establishments engaging 10 or more persons.

Source: Ministry of Trade and Industry, *Economic Survey of Singapore*, 1982.

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of a workforce of 1,140,500 were employed by manufacturing firms of which about 39% of the workforce were to be found in the machinery and appliances industry group alone. This industry group also houses the fastest growing industry in manufacturing, namely, the electrical and electronics industry, which during the 1970's, experienced a fourfold expansion in the number of establishments.

In terms of gross output (in current prices) the petroleum products industry dominated manufacturing throughout the 1970s and early 80's, producing approximately 40% of the total manu-

facturing output in 1982 (see Table 2). The machinery and appliances industry group was the next largest (24%) followed by the food and beverage industry group (6.1%) and the transport equipment group (5.8%). These same industry groups also dominated value added in manufacturing. Thus, the machinery and appliances industry group alone accounted for 30.9% of manufacturing value added in 1982; the petroleum products industry 18.2%, the transport equipment industry 11.4% and the food and beverages industry group, 6.3%.

In short, the three most prominent industry groups in manufacturing at present are the machinery and appliances, petroleum products and the transport equipment industry groups. They together accounted for 24.9% of the total number of manufacturing establishments, 50.2% of total manufacturing employment, 70.5% of gross output and 62.3% of manufacturing value added in 1982.

Three features of the manufacturing sector in Singapore are particularly worthy of mention. They are (1) the rise in foreign participation, (2) the increase in export orientation and (3) the increase in skills content in manufacturing

Table 3 Principle Statistics of Manufacturing Establishments by Capital Structure for Selected Years (%)

Capital Structure	No. of Establishments	No. of Workers	Output	Value-added
<i>1968</i>				
Wholly Local	80.5	58.1	41.2	40.8
More than Half Local	7.8	15.1	12.7	15.3
Less than Half Local	5.7	13.7	13.4	14.6
Wholly Foreign	6.0	12.5	32.7	29.3
Total	100.0	100.0	100.0	100.0
<i>1975</i>				
Wholly Local	66.9	32.8	18.1	24.3
More than Half Local	11.1	15.2	10.7	13.0
Less than Half Local	9.6	20.5	15.0	15.3
Wholly Foreign	12.4	31.5	56.2	47.4
Total	100.0	100.0	100.0	100.0
<i>1981</i>				
Wholly Local	63.3	28.3	14.4	19.2
More than Half Local	10.6	13.2	9.6	13.1
Less than Half Local	9.4	15.7	20.1	13.4
Wholly Foreign	16.7	42.8	55.9	54.3
Total	100.0	100.0	100.0	100.0

Source: Singapore, *Report on the Census of Industrial Production*, various issues.

output.

The extent of foreign capital participation in manufacturing can be seen in Table 3. In 1968, 88% of the total number of establishments in manufacturing were either wholly local or more than half local. They employed 74% of the total number of workers in manufacturing, produced 54% of the gross output and 56% of manufacturing value added. This was at the beginning of the export-orientated industrialization programme of the Government. According to the latest report on the census of Industrial Production, in 1981, 74% of manufacturing establishments were still either wholly local or more than half local. However, they employed only 42% of the total number of workers, produced 24% of manufacturing output and 32% of value added. The foreign establishments have thus clearly dominated the manufacturing sector in Singapore accounting for more than half of manufacturing employment, about 3/4 of manufacturing output and about 2/3 of manufacturing value added. By nationality, these foreign manufacturers come from a wide spectrum of countries, predominated, however, by American, Japanese and West German interests.

The second feature is the increasing degree of export orientation of the manufacturing industries in Singapore. Despite the increased emphasis on manufacturing for export after 1965, the export orientation of the manufacturing sector, as measured by the

export-output ratio did not record any dramatic change between 1960 and 1972 with a rise from 35.3% to 39.1%. It really only took off after 1972 and slowly increased, reaching a peak of 64.5% in 1979 and falling slightly to 61.4% as of end 1982 mainly because of the world economic recession (see Table 4).

Finally, the manufacturing industry has progressed from its initial phase of

Table 4 Output Growth and Export Growth of the Manufacturing Sector Singapore, 1960-1982

Year	Output (\$\$MN)	Output Growth Rate (%)	Export Output Ratio (%)
1960	465.6	16.7	35.3
1961	518.4	11.3	34.5
1962	660.3	27.4	32.9
1963	843.8	27.8	26.5
1964	927.9	10.0	28.7
1965	1,086.4	17.1	32.1
1966	1,325.8	22.0	30.5
1967	1,687.2	27.3	30.1
1968	2,175.7	29.0	27.5
1969	3,213.9	47.7	39.4
1970	3,891.0	21.1	39.1
1971	4,699.2	20.8	41.6
1972	5,722.2	21.8	46.2
1973	7,938.1	38.7	53.8
1974	13,346.9	68.1	58.5
1975	12,610.1	-5.5	57.1
1976	15,317.4	21.5	62.5
1977	17,518.2	14.4	62.6
1978	19,666.7	12.3	64.2
1979	25,133.7	27.8	64.5
1980	31,657.9	26.0	60.6
1981	36,787.1	16.2	60.8
1982	35,650.9	-3.1	61.4

Source: Singapore, *Yearbook of Statistics and Economic Survey of Singapore*, various years.

Table 5 Skill Coefficient of the Manufacturing Sector Selected Years

	Professional, Technical Administrative and Managerial (I)	Production, Transport and Other Manual Workers (II)	Skill Coefficient* $S_c = I/II$	Ratio of Skilled to Unskilled Workers
1970	6,659	101,007	0.066	1 : 15
1980	31,056	247,562	0.125	1 : 8
1982	36,300	256,100	0.142	1 : 7

* Based on Keesing's definition of skilled and unskilled workers. See Keesing [1965].

Source: *Yearbook of Statistics*, Singapore, various issues and *Economic Survey of Singapore*, 1982.

producing simple labour intensive manufactured products to more sophisticated, more capital intensive, higher value added and higher technology output. This will be further discussed in the next section. It suffices to point out here that much more skilled personnel are today in the manufacturing sector than in the past. This can be clearly seen by the use of the skill coefficient index, computed in Table 5. Thus the table indicates that whereas in 1970, the ratio of skilled to unskilled workers was 1 : 15, in 1982, the corresponding ratio was 1 : 7.

III Trends in Singapore's Manufacturing Exports

In this and in subsequent sections of this paper, manufacturing exports will be analysed according to the Standard International Trade Classification (SITC) for manufactured goods i.e., categories 5-8, for which the latest statistics are available.

a) Growth Performance

The growth of manufactured exports in Singapore can be seen from Table 6. In 1960, total manufactured exports

came to only S\$735 million. The incipient phase of industrialization raised this to S\$1,321 million by 1970, an increase of 80%. By 1980, under the impact of a more vigorous policy of export orientation, and no doubt coupled with global inflation in the 1970's following in particular the 1974 quadrupling of oil prices, total manufactured exports reached S\$18,522 million, an increase of 1,302%. In value terms at least, total manufacturing exports in Singapore thus increased much more spectacularly in the 1970's than in the 1960's.

In 1981 and 1982, under the impact of the prolonged global recession, the growth rates in total manufactured exports slowed down considerably, as can be seen from column 5 of Table 6.

Singapore's total manufactured exports in fact consist of two important distinct parts, namely, domestic manufactured exports and manufactured re-exports. In 1960, at the start of industrialization, Singapore's manufactured re-exports outnumbered domestic manufactured exports in a ratio of roughly 5.2 : 1. By 1973, domestic manufactured exports began to exceed for the

Table 6 Growth of Manufactured Exports, 1960–1982

Year	Value in S\$ Million				Growth Rates (%)		
	GDP at Current Factor Cost (1)	Total Manufactured Exports (2)	Total Domestic Manufactured Exports (3)	Total Manufactured Re-Exports (4)	Total Manufactured Exports (5)	Total Domestic Manufactured Exports (6)	Total Manufactured Re-Exports (7)
1960	2,046.0	734.8	118.5	616.3	—	—	—
1961	2,239.8	848.6	n.a.	n.a.	15.49	n.a.	n.a.
1962	2,371.4	929.1	n.a.	n.a.	9.49	n.a.	n.a.
1963	2,683.8	993.5	n.a.	n.a.	6.93	n.a.	n.a.
1964	2,700.3	881.2	n.a.	n.a.	–11.30	n.a.	n.a.
1965	3,043.4	934.4	207.3	727.1	6.04	—	—
1966	3,365.2	970.5	248.9	721.6	3.86	20.07	– 0.76
1967	3,692.1	906.2	258.5	647.7	– 6.63	3.86	10.24
1968	3,970.8	937.4	288.8	648.6	3.44	11.72	0.14
1969	4,610.0	1,117.5	374.9	742.6	19.21	29.81	14.49
1970	5,319.9	1,320.8	555.3	765.5	18.19	48.12	3.08
1971	6,279.0	1,803.1	845.7	957.4	36.52	52.29	25.07
1972	7,523.9	2,532.2	1,448.0	1,084.2	40.44	71.22	13.24
1973	9,437.8	3,977.2	2,453.3	1,524.0	57.08	69.43	40.46
1974	11,738.2	5,713.1	3,593.0	2,120.1	43.64	46.46	39.11
1975	12,607.6	5337.2	3,049.2	2,288.0	– 6.58	–15.13	7.92
1976	13,625.0	7,277.8	4,306.3	2,971.5	36.36	29.26	29.87
1977	14,835.7	8,637.6	5,209.7	3,427.9	18.68	20.98	13.31
1978	16,382.3	10,570.3	6,134.3	4,436.0	22.38	17.75	29.41
1979	18,586.9	14,304.3	8,290.8	6,013.4	35.33	35.15	35.56
1980	22,381.7	18,522.0	10,348.7	8,173.3	29.48	24.82	35.92
1981	26,196.3	19,925.0	11,378.0	8,547.0	7.57	9.95	4.57
1982p.	28,906.7	19,939.0	10,773.0	9,166.0	0.07	– 5.32	7.24

Source: Department of Statistics, *Yearbook of Statistics*, various years;
Ministry of Trade and Industry, *Economic Survey of Singapore*, various years.

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first time manufactured re-exports in importance and this reverse order has been maintained each year since then. However, in 1982, Singapore's domestic manufactured exports exceeded manufactured re-exports only by a ratio of 1.2 : 1, partly reflecting the changing importance of manufactured re-exports in the total re-export trade of Singapore, which in turn reflects the development

of manufacturing activities in neighbouring countries besides their much higher level of per capita income achieved in the last two decades.

b) *Categorization of Manufactured Exports*

In Table 7, manufactured exports have been classified into 3 main categories indicating 3 type of goods, viz. consumer, intermediate and capital

Table 7 Distribution of Manufactured Exports into Capital, Intermediate and Consumer Goods

(\$\$MN)				
Year	Consumer Goods	Intermediate Goods	Capital Goods	Total
1. 1960	94.7	285.8	340.7	721.2
(Domestic Manufactured Exports)	(24.6)	(75.6)	(18.3)	(118.5)
(Manufactured Re-Exports)	(70.1)	(210.2)	(322.4)	(602.7)
2. 1965	142.8	340.1	435.0	917.9
3. 1970	283.2	477.6	482.1	2,115.8
4. 1975	856.4	1,181.8	2,805.9	4,844.1
(Domestic Manufactured Exports)	(654.3)	(586.1)	(1,823.7)	(3,064.0)
(Manufactured Re-Exports)	(202.1)	(595.8)	(982.2)	(1,780.1)
5. 1980	2,419.6	3,427.5	12,664.9	18,512.0
(Domestic Manufactured Exports)	(1,766.0)	(1,651.9)	(7,155.0)	(10,572.9)
(Manufactured Re-Exports)	(653.6)	(5,509.9)	(5,509.9)	(7,939.1)
6. 1982	2,531.9	3,850.3	13,556.6	19,938.8
(Domestic Manufactured Exports)	(1,689.5)	(1,669.2)	(7,739.7)	(11,098.6)
(Manufactured Re-Exports)	(842.4)	(2,181.0)	(5,816.9)	(8,840.2)
<i>Percentage Distribution</i>				
1. 1960	13.13	39.63	47.24	100.00
(Domestic Manufactured Exports)	(20.76)	(63.80)	(15.44)	(100.00)
(Manufactured Re-Exports)	(11.63)	(34.88)	(53.49)	(100.00)
2. 1965	15.56	37.45	47.39	100.00
3. 1970	18.60	34.96	46.44	100.00
4. 1975	17.68	24.40	57.92	100.00
(Domestic Manufactured Exports)	(21.35)	(19.13)	(59.52)	(100.00)
(Manufactured Re-Exports)	(11.35)	(18.51)	(55.18)	(100.00)
5. 1980	13.07	18.51	68.41	100.00
(Domestic Manufactured Exports)	(16.70)	(15.62)	(67.68)	(100.00)
(Manufactured Re-Exports)	(11.34)	(22.36)	(69.40)	(100.00)
6. 1982	12.70	19.31	67.99	100.00
(Domestic Manufactured Exports)	(15.22)	(15.04)	(69.74)	(100.00)
(Manufactured Re-Exports)	(9.53)	(24.67)	(65.80)	(100.00)

Note: From 1964 onwards, Indonesia's trade figures are excluded.

Source: Figures for 1960-1980 are obtained from Goh Yong Chee, *Singapore's Trade in Manufacturers*, National University of Singapore, 1982/83, B. Soc. Sci. (Hons) Academic Exercise, Table 3.2, p. 34. Figures for 1982 are computed from *Singapore Trade Statistics*, December 1982.

goods.⁴⁾ A rising trend in all 3 categories can be observed, although the increase varies amongst the different categories resulting in a dramatic change in their percentage composition. Intermediate goods show a declining relative share, capital goods a rising relative share whilst consumer goods a rising share prior to 1970 and declining somewhat henceforth. Table 7 also clearly indicates that of total domestic manufactured exports, domestic manufactured exports of capital goods increased from 15.4% in 1960 to 69.7% in 1982 at the expense of the other two categories with exports of intermediate goods dropping most drastically from about 63.8% in 1960 to 15.0% in 1982, indicating the impact of Singapore's restructuring programme. In terms of manufactured re-exports, the percentage share continues to be highest for capital goods, followed by intermediate goods and then consumer goods; 65.8%, 24.7% and 9.5% respectively for 1982.

The manufacturing exports at the SITC 3 digit level can also be categorized into 4 categories in terms of their labour intensity of production, with labour intensity measured by value-added per worker in the industries producing the manufactured goods. Here category 1 consists of the most labour intensive goods; category 2 the

next most labour intensive goods and so on until category 4, which consists of the most capital intensive goods. Appendix II gives details of the various categories of classification.

Table 8 shows the computed results which indicate that category 3 continues to command the highest proportion of manufactured exports, followed by category 4, while category 2 has since the 1970's, increased its percentage share over category 1 leaving the latter to be ranked last. The relative shares of domestic manufactured exports and manufactured re-exports for selected years are also shown. For the success or otherwise of the economic restructuring programme, in terms of its impact on domestic exports, we must, strictly speaking, look at only the domestic manufactured exports. Comparing 1975 with 1982, domestic manufactured exports for category 1 declined from 10.7% to 7.1%, but for category 3, it increased from 51.8% to 59.8%. Category 2 declined only very slightly in relative shares whilst, for category 4, affected largely by the drop in demand for various capital equipment and products, we see its relative share declining from 32.3% in 1980 to 12.1% in 1982. However, if 1975 is compared, the corresponding figure for the year was only 15.6% indicating a clear shift towards more higher value-added domestic manufactured exports from 1975 to 1980.

The above discussion highlights the point that Singapore has over the years increasingly shifted from exporting la-

4) The criteria for classification have been adopted from a study by Nyaw Mee-Kau [1979]. The categories of classification are given in Appendix I.

Table 8 Categorization of Manufactured Exports by Labour Intensity of Production
(S\$MN)

Year	Category 1	Category 2	Category 3	Category 4	Total
1960	116.9	99.1	3,057.0	1,907.7	5,180.0
1965	149.5	106.7	402.3	245.4	903.9
1970	199.5	247.7	561.3	260.2	1,268.7
1975	439.6	942.3	2,763.8	658.8	4,804.5
(Domestic Manufactured Exports)	(326.4)	(668.3)	(1,579.0)	(476.6)	(3,050.2)
(Manufactured Re-Exports)	(113.2)	(274.0)	(1,184.8)	(182.2)	(1,754.2)
1980	1,291.7	2,935.8	8,021.2	5,622.5	17,871.2
(Domestic Manufactured Exports)	(960.7)	(1,882.0)	(4,214.3)	(3,363.9)	(10,420.9)
(Manufactured Re-Exports)	(331.0)	(1,053.8)	(3,806.9)	(2,258.6)	(7,450.3)
1982	1,107.3	3,445.4	11,121.1	3,462.7	19,136.5
(Domestic Manufactured Exports)	(775.0)	(2,302.7)	(6,564.9)	(1,330.1)	(10,972.7)
(Manufactured Re-Exports)	(332.3)	(1,142.7)	(4,556.2)	(2,132.6)	(8,163.8)
<i>Percentage Distribution</i>					
1960	16.40	13.91	42.91	26.78	100.00
1965	16.54	11.80	44.51	27.15	100.00
1970	15.72	19.53	44.24	20.51	100.00
1975	9.15	19.62	57.55	13.68	100.00
(Domestic Manufactured Exports)	(10.7)	(21.9)	(51.8)	(15.6)	(100.00)
(Manufactured Re-Exports)	(6.4)	(15.6)	(67.5)	(10.4)	(100.00)
1980	7.23	16.43	44.88	31.46	100.00
(Domestic Manufactured Exports)	(9.2)	(18.1)	(40.4)	(32.3)	(100.00)
(Manufactured Re-Exports)	(4.4)	(14.1)	(15.1)	(30.3)	(100.00)
1982	5.79	18.00	58.11	18.09	100.00
(Domestic Manufactured Exports)	(7.06)	(20.99)	(59.83)	(12.12)	(100.00)
(Manufactured Re-Exports)	(4.07)	(13.99)	(55.81)	(26.12)	(100.00)

Source: See Table 7.

bour intensive goods to more capital intensive, higher value added goods. This appears to be also true of its domestic manufactured exports. On the demand side, the rapid industrial development of neighbouring countries has led them to reduce imports of simple consumer manufactures and increase their imports of intermediate and capital goods.

c) *Destination of Singapore's Manufactured Exports*

Being a trading nation, Singapore believes passionately in free trade and thus trades with almost any country

that is willing to trade with her. All in all, Singapore has trading ties with more than 100 countries from all over the world, be they socialist, communist or market-orientated democracies.

Table 9 indicates the direction of Singapore's trade in manufactures to her major trading partners. Amongst the developing countries, Asean as a group holds the largest share of her manufacturing exports. However, this share has declined over time from 62.7% in 1960 to 25.6% in 1982, indicative perhaps of Singapore's success in diversifying her export markets in

Table 9 Manufactured Exports* to Singapore's Major Trading Partners, 1960-1982

Country/Region	1960		1970		1980		1982	
	S\$MN	%	S\$MN	%	S\$MN	%	S\$MN	%
EEC	19.2	2.66	105.0	0.79	2,614.8	14.12	2,536.1	12.72
France	0.2	0.03	7.4	0.56	500.0	2.70	491.2	2.46
Germany (West)	1.0	0.14	20.8	1.57	929.5	5.02	732.2	3.67
Italy	0.3	0.04	0.1	0.63	228.0	1.23	237.0	1.19
Netherlands	1.2	0.16	8.3	0.45	228.3	1.23	391.4	1.96
United Kingdom	13.5	1.83	57.9	4.38	556.8	3.01	529.8	2.66
EFTA	0.3	0.04	7.3	0.56	243.5	1.51	211.5	1.10
Sweden	**	**	4.2	0.32	101.2	0.55	96.7	0.48
Switzerland	0.2	0.03	2.3	0.17	96.3	0.52	75.5	0.38
Japan	0.8	0.10	12.7	12.96	591.1	3.19	920.6	4.62
USA	2.5	0.33	186.3	14.12	4,190.0	22.62	4,642.8	23.28
Canada	0.1	0.10	11.8	0.89	150.6	0.81	220.7	1.11
Australia	3.3	0.44	28.2	2.13	390.5	2.11	571.8	2.87
New Zealand	2.3	0.31	5.4	0.41	54.8	0.30	83.0	0.42
ASEAN	461.0	62.73	649.1	49.15	4,717.8	25.47	5,111.4	25.64
Malaysia	433.5	59.00	604.5	45.77	3,750.2	20.25	4,188.3	21.01
Thailand	25.8	3.51	34.0	2.57	631.2	3.41	619.1	3.10
Philippines	1.7	0.23	10.7	0.81	336.3	1.82	304.0	1.52
East Asian NICs	17.3	2.34	89.0	6.74	1,184.8	6.40	1,411.0	7.08
Hong Kong	16.9	2.29	82.2	6.23	854.1	4.61	1,061.3	5.10
Korea (South)	0.3	0.04	2.2	0.17	89.7	0.49	162.6	0.82
Taiwan	0.1	0.01	4.5	0.34	241.1	1.30	232.1	1.16
Socialist Countries								
Total	0.1	**	6.8	0.56	977.5	5.28	378.1	1.90
China	**	**	5.9	0.51	854.1	4.61	309.4	1.55
USSR	**	**	0.8	0.03	96.9	0.52	42.1	0.21
Overall Total	734.8	100.00	1,320.8	100.00	18,522.0	100.00	19,939.0	100.00

* SITC Sections 5-8

** Figure < 0.01

Source: Computed from Department of Statistics, *Singapore Trade Statistics*, various years.

manufactures.

In the past, commodity groups pertaining to chemicals, textile fabrics and related products and raw materials such as iron and steel comprise the usual manufactured exports to her Asean neighbours. Increasingly, however, especially since the late 1970's, the com-

position has shifted to commodity groups mainly from SITC 7, which is machinery and transport equipment, such as telecommunication equipment, motor cars, television receivers and civil engineering plants and equipment.

A significant feature of the trend of manufactured exports to developing

countries is the increasing share to the East Asian NICs⁵⁾ in recent years. The share of manufacturing exports to these countries increased from 2.3% in 1960 to 6.7% in 1970 to 7.1% in 1982 and it seems likely that the trend will continue barring any further protectionist measures imposed by the governments of these countries.

Manufactured exports to the East Asian NICs in 1960 included commodity groups such as cotton fabrics, iron and steel, and watches and clocks to Hong Kong; tin and motor vehicles to Taiwan and metal manufactures and articles to Korea. By 1982, Singapore's manufactured exports to these countries include electronic valves, television receivers and industrial machinery.

Amongst the industrial countries, Singapore's manufacturing exports are also gaining importance in the US, Japan and Australia, with the US being the top export market for Singapore's manufactures in 1982, accounting for 23.3% of her total manufactured exports as compared with 14.1% in 1970 and 0.3% in 1960. Ever since her switch to export orientation, Singapore has intensified her efforts to promote exports in the developed countries. The fact that her manufactured exports to developed markets have increased indicates that she has to a certain extent gained access to these developed markets despite protectionist measures.

Major manufactured exports to the

US in the past were mainly veneers and plywood followed by tin and cotton fabrics. Today, they consist mainly of telecommunications equipment, electrical apparatus and aircrafts, ships and boats.

As for Japan, Singapore's exports of leather, chemical materials and iron and steel in the 1960s soon gave way to medicinal and pharmaceutical products, non-electrical machinery parts, electronic valves and clocks and watches.

The importance of the Pacific Basin as an export market for Singapore can be seen by the fact that in 1982, 65% of Singapore's total manufactured exports are to the countries in the Pacific Basin⁶⁾ with the figures dropping to about 40%, if we exclude the exports to Singapore's Asean neighbours.

IV Trends in Singapore's Manufactured Imports

a) *Growth Performance*

The trend of manufacturing imports to Singapore indicating an increase of its share to total imports can be seen from Table 10. Generally, the increase was registered since the beginning of the 1970s. This is mainly due to the increasing demand for imported intermediate inputs as Singapore's industrialization strategy shifted into higher gear; the rising standard of living and hence the growing demand for imported consumer manufactures; and the change in the content of entrepot ex-

5) They comprise of South Korea, Taiwan and Hong Kong.

6) Note that trade with Indonesia is not included in the figures.

Table 10 Growth of Manufactured Imports, 1960–1982

Year	Total Manufactured Imports (S\$MN)	Total Manufactured Imports/Total Imports (%)	Growth Rate of Manufactured Imports (%)
1960	1,098.0	26.93	—
1961	1,326.4	33.47	20.80
1962	1,424.5	35.30	7.40
1963	1,670.4	39.04	17.26
1964	1,497.0	43.03	—10.38
1965	1,645.4	43.22	9.91
1966	1,710.1	42.06	3.93
1967	1,995.8	45.29	16.71
1968	2,466.1	48.51	23.56
1969	3,137.2	50.25	27.21
1970	4,294.9	57.01	36.90
1971	5,139.8	59.32	19.67
1972	5,792.5	60.73	12.70
1973	7,706.1	61.59	33.04
1974	11,564.1	56.67	50.06
1975	11,007.4	57.12	— 4.81
1976	11,722.4	52.32	6.50
1977	13,453.4	52.71	14.77
1978	16,843.3	56.90	25.20
1979	21,453.4	55.96	27.37
1980	28,178.8	54.88	31.35
1981	30,723.7	52.75	9.03
1982p	32,269.7	53.56	5.03

Source: Singapore, Ministry of Trade and Industry, *Economic Survey of Singapore*, various years.

ports from primary products to manufactures due to the industrial development of the surrounding countries in the 1970s.

b) *Categorization of Manufacturing Imports*

Table 11 indicates the distribution of manufactured imports in terms of consumer, intermediate and capital goods.

Between 1960 and 1982, the percentage increase of consumer goods was about 1545%; intermediate goods about 1485% and capital goods 4915%. In terms of percentage shares, the declining shares are in both consumer and intermediate goods, whereas an increasing share is registered by the capital goods category.

Table 12 categorizes manufactured imports in accordance to their labour intensity as in the case of manufactured exports. Of note is that manufactured imports for all four categories in absolute values have increased during the period 1960–1982, though the highest percentage increase was registered for category 3 (4014%), followed by category 2 (2806%), category 4 (2665%) and finally category 1 (644%). In terms of the relative share of manufactured imports in these categories, category 3 ranked first while category 1, the most labour intensive group, ranked last. Indeed, as Table 12 shows, in 1982, category 1 came to only 4.3% of total manufactured imports, compared with the corresponding figure of 17.0% in 1960.

c) *Origin of Singapore's Manufactured Imports*

The absolute and relative shares of manufactured imports from Singapore's major trading partners are shown in Table 13. If we consider just the countries in the Pacific Basin region as previously specified, it can be seen that in general, imports from the 5

Table 11 Distribution of Manufactured Imports into Consumer, Intermediate and Capital Goods

(S\$MN)

Year	Consumer Goods	Intermediate Goods	Capital Goods	Total
1960	212.0	455.5	430.0	1,097.5
1965	273.0	611.0	760.5	1,644.5
1970	515.4	1,520.2	2,259.3	4,294.9
1975	1,224.1	2,809.1	6,974.2	11,007.4
1980	2,727.0	6,490.0	18,772.7	27,989.7
1982	3,486.5	7,217.7	21,565.4	32,269.6

<i>Percentage Distribution</i>				
1960	19.32	41.50	39.18	100.00
1965	16.60	37.16	46.24	100.00
1970	12.00	35.40	52.60	100.00
1975	11.12	25.52	63.36	100.00
1980	9.74	23.19	67.07	100.00
1982	10.80	22.37	66.83	100.00

Source: See Table 7.

Table 12 Categorization of Manufactured Imports by Labour Intensity of Production

(S\$MN)

Year	Category 1	Category 2	Category 3	Category 4	Total
1960	183.7	179.5	412.4	307.2	1,082.8
1965	211.7	250.3	687.0	468.2	1,617.2
1970	329.3	882.1	1,966.9	1,049.2	4,227.5
1975	510.9	1,695.9	5,728.2	2,924.6	10,859.6
1980	1,191.7	3,967.0	12,599.2	9,699.2	27,457.1
1982	1,367.4	5,215.9	16,964.1	8,494.2	32,041.6

<i>Percentage Distribution</i>					
1960	16.97	16.58	38.09	28.37	100.00
1965	13.09	15.48	42.48	28.95	100.00
1970	7.79	20.87	46.53	24.82	100.00
1975	4.70	15.62	52.75	26.93	100.00
1980	4.34	14.45	45.89	35.33	100.00
1982	4.27	16.28	52.94	26.51	100.00

Note: Commodity group number 68 is excluded in the above computation.

Source: See Table 7.

developed countries⁷⁾ form a substantial part of Singapore's manufactured imports, increasing from 34.1% in 1960 to 57.1% in 1980, though for 1982, as a result of the world wide economic recession, its percentage fell slightly to 55.7%.

Japan and the US ranked first and second respectively in terms of Singapore's main supplier of manufactured imports. This is a consequence of Singapore's drive up the technological ladder, and the fact that there are a growing number of multinationals from these countries operating in Singapore. Japan alone accounted for 32.4% of Singapore's total manufactured imports in 1982, whilst the US accounted for 20.9%. Detailed

data show that more than half of the manufactured imports in 1982 from the US comprised of aircrafts, semi-conductors, machinery parts, chemicals and radio and television components, a reflection of Singapore's growing electronic and oil rig construction industry, whilst for Japan the rise in manufactured imports was due to increased imports of motor cars, domestic electrical and electronic appliances such as cassette recorders, television sets and watches and steel bars and plates.

With regards to Singapore's

7) They are Japan, the United States, Canada, Australia, New Zealand.

Table 13 Manufactured Imports from Singapore's Major Trading Partners, 1960-1982

Country/Region	1960		1970		1980		1982	
	S\$MN	%	S\$MN	%	S\$MN	%	S\$MN	%
EEC	387.2	35.28	982.8	22.88	4,821.1	17.22	5,543.1	17.18
France	13.5	1.22	56.5	1.32	559.5	2.00	985.8	3.05
Germany (West)	69.4	6.32	243.8	5.68	1,592.4	5.68	1,797.7	5.57
Italy	15.5	1.42	87.9	2.05	458.9	1.63	576.1	1.78
Netherlands	22.2	2.02	51.6	1.20	370.6	1.32	344.8	1.07
United Kingdom	250.3	22.80	483.3	11.25	1,526.5	5.45	1,519.0	4.71
EFTA	60.5	5.51	88.4	2.06	1,094.6	3.91	1,122.6	3.47
Sweden	5.7	0.52	32.9	0.77	459.0	1.64	339.8	1.05
Switzerland	44.0	4.00	18.6	0.43	402.5	1.44	404.1	1.25
Japan	247.4	22.54	991.5	23.09	8,812.4	31.48	10,457.2	32.40
USA	100.1	9.12	476.6	11.09	6,641.4	23.08	6,749.3	20.92
Canada	8.5	0.78	33.1	0.77	185.5	0.66	815.8	0.58
Australia	17.4	1.58	105.8	2.46	455.1	1.63	486.2	1.51
New Zealand	0.4	0.04	7.0	0.16	62.5	0.22	82.8	0.26
ASEAN	82.8	7.55	203.0	4.73	2,153.7	7.69	2,459.0	7.62
Malaysia	78.6	7.15	188.1	4.38	1,631.3	5.83	1,832.4	5.68
Thailand	2.5	0.02	10.1	0.24	402.5	1.44	487.2	1.51
Philippines	1.8	0.02	4.8	0.11	119.9	0.43	139.4	0.43
East Asian NICs	72.5	6.61	300.6	7.00	2,547.7	9.10	2,938.9	9.11
Hong Kong	71.1	6.48	169.4	3.94	954.8	3.41	1,132.8	3.51
Taiwan	1.1	0.10	99.7	2.32	1,048.4	3.75	1,121.3	3.47
Korea (South)	0.3	0.03	31.4	0.73	544.5	1.95	684.8	2.21
Socialist Countries								
Total	81.5	7.43	312.7	7.28	866.7	3.10	979.5	3.04
China	68.7	6.27	252.0	5.87	740.3	2.64	856.6	2.64
USSR	6.5	0.60	30.3	0.71	17.7	0.06	96.3	0.30
Overall Total	1097.5	100.00	4,294.9	100.00	27,989.8	100.00	32,269.7	100.00

Source: See Table 9.

Asean neighbours, a fluctuating relative share can be discerned. In the 1960s, Asean, mainly Malaysia, was the largest supplier of Singapore's manufactured imports — the bulk consisting of manufactured goods by material, mainly rubber. In the 1980's, the major import commodities include electronic valves, textiles and related products, plastic materials and veneers and ply-

wood.

A significant rise in the relative share of manufacturing imports from the East Asian NICs may also be observed, increasing from 6.6% in 1960 to 9.1% in 1982. These increases came from Taiwan and South Korea, which together accounted for Singapore's total manufactured imports rising from 0.13% in 1960 to 5.68% in 1982. The major

manufactured imports from the East Asian NICs were textile yarn, fabrics, telecommunication equipment, electronic valves, plastic products and iron and steel plates. The increasing share of manufactured imports from the East Asian NICs clearly reflects the tremendous growth in industrial capacity in these countries and their growing competitiveness in world markets.

V Problems and Obstacles

a) *Protectionism*

Singapore's trade policies are amongst the most liberal in the Pacific Basin region. Its outward looking development philosophy and strategy have been conditioned by its small size, geographical location astride major international shipping and air routes, traditional entrepot role and its lack of natural resources. Export-orientation has been rightly seen as a *sine qua non* for successful industrialization. There are few import tariffs, mostly to raise revenue and to curb consumption of certain "luxury" items, such as alcohol, tobacco and motor vehicles. Protective tariffs on local industry have been low and selective but despite that they have been gradually removed. They remain, however, at a very low level on a few remaining items such as chocolates and garments.

The fact that Singapore is able to enjoy one of the highest living standards in Asia in spite of its lack of natural resources is based on the fact that it has

been able to reap the advantages of international specialization and exchange. The problems that have been associated with this specialization have been minimised through appropriate domestic policies and through market and product diversification. Nonetheless, given the world economic recession, the ugly head of protectionism has increasingly asserted its presence. What is most alarming is the fact that protection has, of late, largely taken the form of non tariff barriers (NTBs) such as quotas, voluntary restraints, orderly marketing arrangements, price maintenance agreements, countervailing duties and the like.⁸⁾

Unlike tariffs, many of these forms of protection are outside the scope of GATT regulations and many need only administrative decisions to come into force. The degree of protection offered by such increasingly important non tariff barriers cannot be quantified and it is therefore far more difficult to assess how greatly they restrict the flow of international trade, both visible trade as well as invisible trade. The pressures for protection are unlikely to be reduced by an economic recovery in the industrial countries, as it will take time to substantially reduce the current serious unemployment situation and put slack industrial capacity back into full use. In the meantime, unless steps are taken to curb the rise of protection-

8) For more information, see the *World Development Report* 1982, p. 33. See also the Commonwealth Secretariat [1982].

ism in whatever form it may arise, the exports of developing countries, including those from Singapore, are bound to be increasingly adversely affected. In this respect, countries in the Pacific Basin which are largely market economies, be they the OECD 5, the East Asian NICs or the Asean five should join forces with other like-minded nations to continue to oppose protectionism in visible and invisible trade and to help to maintain, enhance and exploit the potential for freer trade in the region and in the world. Indeed, for Asean and the East Asian NICs, all of which are moving along the industrialization path, this industrialization momentum would be stopped or retarded, unless they can gain access to markets abroad, including those in the Pacific Basin region. Market access will be less problematic if the developed countries deliberately restructure their economies to accelerate the emergence and development of the so called sunrise industries and to allow the so called sunset industries to take their due course to "set" without governments promising and undertaking the most difficult and expensive task of trying to stop them from "setting" to the detriment of all countries.

b) "*Graduation*"

Besides protection, another problem of immediate interest to Singapore and other NICs and near NICs such as Malaysia and Thailand is that they might soon lose their developing country

status and be "graduated" to the developed country category, thereby losing the special provisions given to them, the most important of which are the GSP tariff concessions and concessionary loans from the World Bank and from other development agencies. If they are excluded from the GSP, their exports would no longer be entitled to preferential tariff treatment in developed countries and therefore their exports would not be as price competitive as similar exports from other developing countries.

There appears to be thus a strong case for the NICs and near NICs in the Pacific Region to work out a joint strategy to curb any move to nip their development path in the bud by developed nations anxious to protect their own domestic industries.

c) *Shortage of Labour and the Services Sector*

A final problem relates to Singapore's domestic labour supply constraint and its impact on the optimum level and direction of industrialization. Given the success of her family planning policies and with the anticipated flow in the volume of investment, Singapore is likely to continue to face a manpower shortage in the coming years. The use of foreign labour to meet shortages offers considerable advantages, but there are also social and other costs involved and the government has wisely declared its intention to phase out all

foreign labour by 1991, with those from non-traditional sources⁹⁾ leaving by December 1986.

On the other hand, the government's projected sectoral breakdown of the economy by 1990 indicates that a substantial part of the gain in GDP is expected to come from the manufacturing sector which is expected to maintain an average annual growth of 11%–13.5% and raising its share of total GDP from about 24% in 1980 to 31% by 1990. Given the labour supply constraint, the way out to achieve this industrialization target is through higher productivity. This is being vigorously pursued through measures like increasing mechanization, particularly automation, computerization and robotization. Increasing efforts are also made in more widespread skills upgrading at all levels for those who are in employment. A tax of 4% of the payroll for workers earning below a certain sum is put aside to be managed on a tripartite basis for skills development and speedier and more widespread mechanization.¹⁰⁾ Steps too have been taken by the government to enlarge educational facilities at the secondary and tertiary level with a view to have

a bigger pool of better educated manpower supply.

In the meantime, while the manufacturing sector is being emphasised, one should not forget also the services sector which has an equally important role to play in Singapore's economic progress. Besides, the services sector has a number of advantages over the manufacturing sector.

Because of the manufacturing sector's large labour-intensive base and the rigidities imposed by fixed capital investments, restructuring in manufacturing can only take place slowly. It will be an expensive process, in terms of costly manpower training and incentives which have to be offered to induce high-technology investments. On the other hand, modern traded services—including finance, banking, business service, medical service, transport, telecommunication and tourism—have grown as or more rapidly than manufacturing in Singapore over the past decade and without the Government providing incentives that manufacturing enjoys. Furthermore, Singapore has an established and much stronger international competitive advantage in the export of services, based on its long experience and large human and physical capital investment in this sector, and on its location in a rapidly growing regional economy of which it is the service hub.

Excess demand will probably still exist for skilled and professional personnel, but such people may be more easily

9) With the exception of those in the construction, shipbuilding and repairing and domestic services. The original dateline was 1984 but this has been extended to December 1986 subjected to the proviso that it comprise only 5% of a company's workforce.

10) The fund thus set up is called the Skills Development Fund. The writer had the honour of serving as its first chairman for three years.

imported for high value-added services activities than for some production manufacturing. This is because Singapore is world competitive in the provision of such services, whereas it is only beginning to establish a foothold in intermediate level high technology manufacturing. At the same time service activities are less land intensive than production manufacturing, especially heavy manufacturing activities so that they conserve on yet another scarce resource of the island city-state.

All in all, it is clear that both exported manufacturing and services will continue to be the pillars of growth in Singapore in the future. For the manufacturing sector, labour intensive, low-skilled and low value added activities have clearly reached their zenith and are definitely on their way out. Given the trend towards protectionism, the likely loss of some of Singapore's GSP concessions, together with the labour supply constraint, it seems clear that market forces are likely to work in favour of many service activities such as finance, banking and medical services as well as manufacturing activities that have higher value-added, are more technology orientated and which are less prone to protectionist curbs. In the view of the writer, it is not crucial that the manufacturing sector must reach the 31% of GDP target. It is more crucial how this target is achieved, particularly whether other better options of having a higher income are available.

VI Regional Self-Help

a) *Asean Economic Cooperation*

Protectionism and other problems highlighted in the on-going North-South controversy seems to indicate that perhaps countries with strong trading links and of close proximity to one another should consider the question of having, inter area, a sort of regional free trade area among themselves. In fact one of the reasons for the formation of Asean has been to enhance economic cooperation among its 5 member states. Though much of the potential of Asean economic cooperation is still far from being realized, concrete steps are being taken together to expand Asean trade in general and intra-Asean trade in particular, the most promising perhaps being tariff reductions via the Asean Preferential Trading Arrangements (PTA).¹¹⁾ Of the wisdom of the other measures of intra-Asean economic cooperation i.e., the Asean "package deal" arrangements and the industrial complementation schemes, we have our reservations.¹²⁾

Without doubt Singapore needs Asean politically. It also needs Asean economically. This economic need, however, does not necessarily imply that Singapore's and other members' interests would be automatically promoted if Asean economic cooperation projects

11) By the end of 1982, a total of 8,560 items were enjoying preferential treatment.

12) See Lim Chong-Yah [1981], especially Chapters 8, 9 and 10.

result in curbing freedom in international specialization and international trade. However, all Asean economies are globally oriented and this global orientation has enabled Asean to cooperate very closely with one another to safeguard, protect and promote their legitimate interests vis-a-vis third countries. Nor does Asean limit the right of member countries to promote bilaterally economic relationship between two or more members or with other non-member countries. In this sense Asean is a flexible organization, capable of accommodating various interests and does not regard the promotion of national economic interests as necessarily contradicting the promotion of overall Asean interests. Indeed, the promotion of national interests by member nations more often than not is in line with the promotion of the overall interests of Asean as a group, being so interdependent on each other politically if not also economically, especially in their relationship with third countries or groupings.

b) *A Proposal for a Pacific Free Trade Area*

The remarkable and impressive trade and industrial growth achievements of the developing countries in the Pacific Basin, namely, the NICs and the rest of the Asean countries indicate that the Pacific Basin region will continue to remain among the most dynamic regions in the world in the 1980s and the 1990s. This optimism is reinforced by

the fact that not only the two biggest economies in the world, namely, the USA and Japan are in this region, but also that both are extremely dynamic economies by any yardstick.

In terms of the share of trade conducted by a country with other countries within the region, it is clear that the Pacific Basin is of great importance to all the countries in the region. For example, the US which has a more global orientation than almost any country in the world still exports 36% to and imports 50% from other countries in the Pacific Basin in 1981. The Japanese shares of Pacific Basin trade are 49% of exports and 44% of imports; the Philippines, 71% of exports and 57% of imports; Thailand 51% of exports and 62% of imports and South Korea, 59% of exports and 60% of imports.¹³⁾

The broad commodity composition is another remarkable feature of the Pacific Basin's international trade. The five major food exporters, namely, the USA, Canada, Australia, New Zealand and Thailand are found within this region and together they provide almost all the internationally traded goods frequently transacted, other than tropical beverages. Furthermore, most industrial raw materials are provided within the region. In the realm of manufactures the Pacific Basin provides the world's most important

13) These figures are obtained from the *IMF Direction of Trade Statistics* December 1982. The figures exclude any trade with Taiwan.

suppliers of labour intensive, capital intensive and technology intensive products.¹⁴⁾ Although the region is not fully self-sufficient, it is remarkably close to it.

In the 1980s, it can be expected that the resource rich developed countries (excluding Japan) will not be willing to phase out labour intensive goods, for the present production size is already considered to be relatively small, not to mention the serious unemployment problem they face. The production of capital goods and fabricated materials, many of which are resource based will be rationalized and modernized but the process will take a long time because of the prevailing slow growth conditions. Japan will be in a better position to phase out labour intensive goods than any other Pacific developed countries and concentrate on their capital goods sector of which they are known to be most competitive.

The East Asian NICs on the other hand (excluding Singapore) have become very competitive in labour intensive goods and all, including Singapore, are moving towards the production of more higher technology products. The Republic of Korea, for example, has committed itself to the development of heavy industries such as petro-chemicals, iron and steel. Meanwhile, effort is also made to promote more higher technology goods. Hong Kong has already begun moving in that direction.

14) See Krause [1981].

It is thus clear that steps should now be taken to prevent any potential trade conflicts that might arise as a result of stiff competition amongst countries in the Pacific Basin. In the case of the East Asian NICs there appears to be a need for them to join forces to secure better access to the markets of industrialized countries besides more access to the domestic markets of each of the East Asian NICs themselves. That Asean countries too have this objective of greater access to the markets of the industrial nations as well as the markets of the NICs provides a good basis for the two groups to co-operate to promote their mutual interests. With Asean and East Asian NICs, there are all in all 8 economic entities, not to double count Singapore, and these 8 entities can explore the possibility of having an ongoing dialogue with the OECD 5 in the Pacific Basin, providing indeed a Pacific Basin North-South dialogue as a part of the global dialogue between the North and the South.

In the view of the writer, there is even a good case to explore the long run possibility of having a Pacific Free Trade Area (PFTA) embracing the developed and the developing countries in the region. The Pacific grouping is at times referred to as 5+5+1, that is, the Asean 5, the Pacific OECD 5 and South Korea. Taiwan and Hong Kong are left out because of possible political complications. Similarly, the Latin Americans and the South Pacific nations

are often also not brought in, the rationale of which is more difficult to understand.

The 5+5+1 country formula has the disadvantage that it evokes the fear of the Asean states that they will be dominated by the economically, if not also politically, more powerful OECD 5, particularly if it is remembered that the USA and Japan, the world's two largest economies, are in the OECD 5. One way to allay this understandable fear is to bring in the Latin Americans and South Pacific nations, and if politically possible, also Taiwan and Hong Kong.

Of course, all important moves such as forming a Pacific Free Trade Area are bound to be strewn with problems and difficulties. This does not mean that the move in this direction should be automatically abandoned. In the view of the writer, the merits of having a PFTA far outweigh the disadvantages and the idea should continue to be explored with increasing vigour.

VII Conclusion

The inevitable conclusion that comes from these observations is that the Pacific Basin is becoming more important to nearly all countries making up the region. These national entities are also becoming more interdependent. Interdependence breeds both prosperity and tension. Unless the governments in the region are able to recognize this economic reality and time their policies to deal with it, the transmission of economic impulses in this highly interdependent region would be detrimental to the countries concerned. Dialogues aimed at better understanding between and among nation states in the region appear to be a timely device to ensure greater understanding and co-operation among themselves. Who knows that such an exploration may one day lead to the formation of a PFTA as one of the measures to have freer trade, if not also freer mobility of factors, among nations in the world?

Appendix I Classification of Production and Trade Data

Industry	UN ISIC Code	UN SITC Code
<i>Consumer Goods</i>		
Wearing Apparels (Clothing)	322	841 (842-848)
Footwear	324	851
Furniture and Fixtures	332	821
Printing and Publishing	342	892, 899
Photographic and Optical goods	385	861-864 811, 812
Other Manufactured Articles n.e.s.		(871-885) 891, 894-899
<i>Intermediate Goods</i>		
Wood and Cork Products	331	63
Paper and Paper Products	341	641-642
Rubber Products	356	62
Leather and Leather Products	323	61, 831
Plastic Products	357	893, 581, 582-585
Industrial Chemicals	351	51, 521-524, 531-532, 571, 572
Other Industrial Chemical Products	352	541, 533, 551-554, 592, 598, 591, 599
Pottery, China and Earthenware	361	666, 667
Glass and Glass Products	362	664-665
Structural Clay Products	363	662
Cement and Concrete Products	364	661, 659
Non-metallic Mineral Products n.e.s.	369	663
Textiles	321	651-658
Fertilizers		561, 562
<i>Capital Goods</i>		
Iron and Steel Basic Industries	371	671-679
Non-ferrous Metal Basic Industries	372	681-689
Fabricated Metal Products	381	691-699
Non-electrical Machinery	382	71, 745, 749
Electrical Machinery, Appliances and Components	383	72, 741-744, 751-778
Transport Equipment	384	73, 781-793

This classification is based on Hong [1966], Chenery [1960], Lewis and Soligo [1965], and Singapore, Department of Statistics [1970].

Source: Adapted from Nyaw Mee-kau [1979].

Appendix II Categorization of 3 Digit Sitc Manufacturing Industries by Labour Intensity of Production

<i>Category 1 (lowest value-added per worker)</i>	<i>Category 3 (continued)</i>
612 Leather, etc. Manufactures	731 Railways Vehicles
652 Cotton Fabrics, Woven	732 Road Motor Vehicles
656 Textile, etc. Products	733 Road Vehicles, Non-motor
666 Pottery	812 Plumbing, Heating Lighting Equipment
831 Travel Goods, Handbags	861 Instruments, Apparatus
841 Clothing not Fur	864 Watches & Clocks
851 Footwear	891 Sound Recorders, Producers
	892 Printed Matter
<i>Category 2</i>	893 Articles of Plastic n.e.s.
611 Leather	897 Gold, Silverware, Jewellery
613 Fur Skins Tanned, Dressed	
631 Veneers, Plywood, etc.	<i>Category 4 (highest value-added per worker)</i>
632 Wood Manufactures n.e.s.	512 Organic Chemicals
633 Cork Manufactures	513 Inorganic Elements, Oxides, etc.
651 Textile Yarn & Thread	521 Coal, Petroleums, etc. Chemicals
653 Woven Textiles, Noncotton	531 Synthetic Dye, Natural Indigo, Lakes
654 Lace, Ribbons, Tullc. etc.	532 Dyes Nes Tanning Products
655 Special Textile, etc. Products	533 Pigments, Paints, etc.
664 Glass	541 Medicinal, etc. Products
665 Glassware	551 Essential Oil, Perfume, etc.
722 Elec. Power Machines, Switchgear	553 Perfume, Cosmetics, etc.
735 Ships & Boats	554 Soap, Cleaning, etc. Prepn.
821 Furniture	561 Fertilizers, Manufactured
893 Toys, Sporting Goods, etc.	571 Explosive, Pyrotech. Products
894 Office Supplies n.e.s.	599 Chemical n.e.s.
899 Other Manufactured Goods	629 Rubber Articles n.e.s.
<i>Category 3</i>	641 Paper & Paperboard
581 Plastic Materials, etc.	661 Cement, etc. Building Products
621 Materials of Rubber	667 Pearl, Precious & Semi Precious Stones
642 Articles of Paper, etc.	671 Pig Iron, etc.
657 Floor Coverings, Tapestry, etc.	672 Iron, Steel Primary Forms
662 Clay, Refractory Building Products	673 Iron & Steel Shapes
663 Other Nonmetal Mineral Manufactures	674 Iron, Steel, Univ. Plate, Sheet
678 Iron, Steel Tubes, Pipes, etc.	675 Iron, Steel Hoop Strip
679 Iron & Steel Castings, Unworked	676 Railway Track etc. Iron, Steel
691 Structures & Parts n.e.s.	677 Iron & Steel Wire
695 Tools	692 Metal Tanks, Boxes, etc.
697 Base Metal Household Equipment	693 Wire Products, Nonelectrical
698 Metal Manufactures n.e.s.	694 Steel Copper Nails, Nuts, etc.
712 Agricultural Machinery	696 Cutlery
715 Metalworking Machinery	711 Power Machinery, Nonelectrical
717 Textile, Leather Machinery	714 Office Machines
718 Machines for Special Industries	723 Electric Distributing Machines
719 Machines n.e.s., Nonelectrical	726 Electro-medical X-ray Equipment
724 Telecommunications Equipment	734 Aircraft
725 Domestic Electric Equipment	842 Fur. etc. Clothes, Products
729 Electrical Machinery n.e.s.	862 Photo, Cinema Supplies

Source: See Appendix I.

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